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EXAMINER

HYEON, HAE M

ART UNIT PAPER NUMBER

2839

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/885,226

Applicant(s)

PAYER ET AL.

Examiner

Hae M. Hyeon

Art Unit

2839

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 27-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Appeal Brief

1. After further review and consideration, the finality of the last office action filed on June 22, 2004 is withdrawn. The prosecution of the application is reopened. A new office action follows. Any inconvenience due to these actions is deeply regretted.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Dautartas et al (5,841,544).

Dautartas discloses a micro-optical component in figure 1, comprising an optical element including a lens 32, for interacting with an optical beam and a mounting structure 12 for attaching the optical element to an optical bench, wherein the optical element is attached to the mounting structure by solid-phase welding or thermo-compression bonding (column 2, lines 58-59).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 4 and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dautartas et al (5,841,544) in view of Synder (5,888,841).

The Dautartas et al. satisfies the limitations of claims 1, 2, and 5. Dautartas et al. in column 2, lines 43-44, discloses substrate made of silicon or of any suitable material. However, Dautartas et al. does not disclose bonding methods recited in claims 3, 4, 16 and 17 and gold coating required for thermocompression bonding as recited in claims 9 and 11. Synder, in figure 3 and 4, discloses bonding of an optical component to a substrate 102 and also in column 7, lines 45-50, discloses various method by which the optical components can be bonded to a substrate. In addition Synder, in column 6, lines 47-48, disclose use of gold in coating the substrate for bonding purpose.

It would have been obvious to one of ordinary skill in the art to use one of the suitable methods for bonding as taught by Synder and use substrate of metal or any other suitable material, as suggested by Dautartas et al. for purpose of supporting the optical element.

6. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dautartas et al in view of Aksyuk et al (EP 0961150 A2).

Claims 5-8 recite the optical element of the micro-optical component being variety of different elements. Dautartas only discloses a lens being the optical element.

Aksyuk discloses a microelectromechanical device interacting with an optical bench to provide a switching or other mechanical, electromechanical or electrical function to the optical bench.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to replace the lens taught by Dautartas with the microelectromechanical device as taught by Aksyuk because the microelectromechanical device would provide a switching or other mechanical, electromechanical or electrical function to the optical bench.

Regarding to the mounting structure being fabricated from a metal, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

7. Claims 14, 15, 18, and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dautartas et al in view of WO 91/06022 and Aksyuk et al (EP 0961150 A2).

Dautartas all the limitations of claim 14 including an optical element including a lens for interacting with an optical beam, a mounting structure, the optical element solid phase welded to the mounting structure and an optical bench. However, Dautartas et al. does not disclose the mounting structure solder bonded to the optical bench. WO '022, discloses a mounting structure for an optical element and the mounting structure 1 is soldered to the bench 10 (see page 5, lines 3-7). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to solder the mounting structure of the Dautartas to the bench as taught by WO '022 so as to permanently fix the mounting structure to the bench.

Regarding to the different optical elements, Dautartas teaches an optical lens and Aksyuk teaches a microelectromechanical device. Furthermore, Aksyuk teaches that a microelectromechanical device interacting with an optical bench to provide a switching or other mechanical, electromechanical or electrical function to the optical bench.

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It would have been obvious at the time the invention was made to a person having ordinary skill in the art to replace the lens taught by Dautartas with the microelectromechanical device as taught by Aksyuk because the microelectromechanical device would provide a switching or other mechanical, electromechanical or electrical function to the optical bench.

Regarding to the mounting structure being fabricated from a metal, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

8. Claims 16, 17 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dautartas et al in view of WO 91/06022 as applied to claims 14 above, and further in view of Synder (5,888,841).

As discussed above, Dautartas in view of W0 91/06022 satisfies the limitation of claim 14. However, Dautartas et al. or W0 '022 do not disclose bonding methods recited in claims 16 and 17 and gold coating required for thermocompression bonding as recited in claim 24. Synder, in figure 3 and 4, discloses bonding of an optical component to a substrate 102 and also in column 6, lines 47-48, disclose use of gold in coating the substrate for bonding purpose. Therefore, it would have been obvious to one of ordinary skill in the art to use gold for bonding as taught by Synder so that the optical element can be bonded to the mounting structure.

Response to Arguments

9. The examiner withdraws the rejection of the second paragraph of 35 U.S.C. 112 for claims 5 and 18 made in the Final Action filed on March 28, 2003.

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10. Applicant's arguments filed December 1, 2003 have been fully considered but they are not persuasive.

The applicant argues that the reference by Dautartas et al (US 5,841,544) does not teach or suggest the combination of an optical element and a mounting structure, wherein the mounting structure attaches the optical element to an optical bench because Dautartas shows a ball lens 32 being solid phase welded directly to an optical bench 12 or platform.

The examiner respectfully disagrees with the applicant's interpretation of the optical bench 12 of Dautartas because Dautartas discloses a surface 70 where the element 12 is mounted. When the lens 32 is attached to the first element 12 that is mounted on the second element 70, the first element 12 is the mounting structure for attaching the lens 32 to the second element 70. Therefore, the element 12 is not the optical bench and it is the mounting element. Furthermore, the surface 70 is the optical bench. In addition, claim 1 does not recite any distinct structural feature of the mounting structure and the optical bench of the instant invention to distinguish them from the mounting structure 12 and the optical bench 70 of Dautartas. Thus, the applicant's argument about the mounting structure and the optical bench only deals with naming convention of the elements without reciting distinct structural features of the elements.

Regarding the reference by Synder (US 5,888,841), the examiner is not focusing on the mounting structure. Instead the examiner is focusing on the bonding method and gold coating taught by Synder. Thus, the examiner believes the rejections applied in this office action are appropriate.

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Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. 4,237,474 by Ladany, US Patent No. 5,177,807 by Avelange et al., US Patent No. 5,181,216 by Ackerman et al., US Patent No. 5,570,444 by Janssen et al., US Patent No. 6,074,103 by Hargreaves et al., US Patent No. 6,571,041 B2 by Bourcier et al., and US Patent No. 6,738,556 B1 by Mueller et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hae M. Hyeon whose telephone number is 571-272-2093. The examiner can normally be reached on Mon.-Fri. (8:30-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tulsidas C. Patel can be reached on (571) 272-2098. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


TULSIDAS C. PATEL
SUPERVISORY PATENT EXAMINER

Hae M Hyeon
Primary Examiner
Art Unit 2839

hnh



